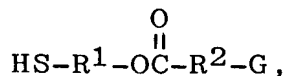
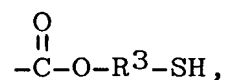


ii) removal of the hydrogen atom from the sulfur atom of a mercaptan, mercaptoacid, mercaptoalcohol, mercaptoacid ester or mercaptoalcohol ester, and where any oxygen present in said tin-containing stabilizer is bonded only to one or more of tin, carbon phosphorus and hydrogen, the improvement which comprises replacing part of the [metal-containing] tin-containing stabilizer with [an optionally substituted] a mercaptohydrocarbylene carboxylate of formula



where G is hydrogen, carboxy

or



Beant's

R¹ and R³, each independently, is alkylene of 2 to 20 carbon atoms, R² is alkylene of 1 to 20 carbon atoms and R¹, R² and R³ each independently is alkenylene of 2 to 20 carbon atoms, cycloalkylene of 3 to 8 carbon atoms, arylene of 6 to 20 carbon atoms, alkarylene of 7 to 40 carbon atoms or aralkylene of 7 to 40 carbon atoms; R¹, R² and R³ being unsubstituted or substituted by one or more of hydroxy, alkoxy of 1 to 20 carbon atoms, oxo, oxirane, alkoxycarbonyl of 2 to 20 carbon atoms, aryloxy-carbonyl of 7 to 20 carbon atoms, acyl of 2 to 20 carbon atoms, acyloxy of 2 to 20 carbon atoms, chloro, bromo, iodo, fluoro, cyano, alkylamido of 2 to 20 carbon atoms, mercapto, alkythio of 1 to 20 carbon atoms, alkylsulfamyl of 1 to 20 carbon atoms, alkylsulfonyl of 1 to 20 carbon atoms, alkyl of 1 to 20 carbon atoms, aryl of 6 to 20 carbon atoms, alkenyl of 2 to 20 carbon atoms and cycloalkyl of 3 to 8 carbon atoms, and where R¹, R² and R³ and their substituents are optionally substituted in the chain by one or more of oxygen, sulfur and nitrogen.

Claim 5, line 1, delete "Claim 4" and insert therein
-- Claim 1 --.

~~Claim 9~~, line 1, delete "Claim 8" and insert therein
-- Claim 1 --.

~~Claim 11~~, line 1, delete "Claim 4" and insert therein
-- Claim 1 --.

Claim 18, ~~line 1~~, delete "Claim 17" and insert therein
-- Claim 1 --.

~~Claim 19~~, line 1, delete "Claim 17" and insert therein
-- Claim 18 --.

Claim 20, lines 2 and 3, delete "metal" in each occurrence and insert -- tin -- in each case.

Rewrite ~~Claim 21~~ as follows:

21.(amended) In a method for stabilizing a vinyl halide polymer against heat and light which comprises incorporating a tin-containing stabilizer therein, said stabilizer comprising a mono- or diorgano- derivative of tetravalent tin where the remaining valences of the tin atom are satisfied by bonds to halogen, oxygen, phosphorus, sulfur and a residue resulting from

- B²
- i) removal of the hydrogen atom from the oxygen atom of a carboxylic acid, an alcohol or a polyol; or
 - ii) removal of the hydrogen atom from the sulfur atom of a mercaptan, mercaptoacid, mercaptoalcohol, mercaptoacid ester or mercaptoalcohol ester,

and where any oxygen present in said tin-containing stabilizer is bonded only to one or more of tin, carbon, phosphorus and hydrogen, the improvement which comprises replacing part of the tin-containing stabilizer with a substituted or unsubstituted mercaptoalcohol ester of a carboxylic acid containing 8 to 20 carbon atoms.

Rewrite Claim 22 as follows:

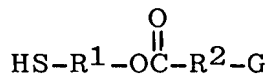
22. (amended) A vinyl halide composition which has been stabilized with respect to heat and light by incorporating therein

a) a [metal-containing] heat stabilizer comprising a mono- or diorgano- derivative of tetravalent tin where the remaining valences of the tin atom are satisfied by bonds to halogen, oxygen, phosphorus, sulfur and a residue resulting from

- i) removal of the hydrogen atom from the oxygen atom of a carboxylic acid, an alcohol or a polyol; or
ii) removal of the hydrogen atom from the sulfur atom of a mercaptan, mercaptoacid, mercaptoalcohol, mercaptoacid ester or mercaptoalcohol ester,

[in which] and where any oxygen present is bonded only to one or more of [said metal] tin, carbon, phosphorous and hydrogen, said [metal-containing] tin-containing stabilizer being introduced in an amount sufficient to provide up to about 0.25 parts of metal per 100 parts of polymer, and

b) [a mercapto ester comprising the reaction product of an optionally substituted mercaptohydrocarbylene-ol with a carboxylic acid, the mercapto ester being introduced in an amount] up to about 6.5 parts per 100 parts of polymer [.] of a mercapto ester of formula



where G is hydrogen, carboxy

or $-\overset{\text{O}}{\parallel}\text{C-O-R}^3-\text{SH}$,

R¹ and R³, each independently, is alkylene of 2 to 20 carbon atoms, R² is alkylene of 1 to 20 carbon atoms and R¹, R² and R³ each independently is alkenylene of 2 to 20 carbon atoms, cycloalkylene of 3 to 8 carbon atoms,

B³ cont'd

arylene of 6 to 20 carbon atoms, alkarylene of 7 to 40 carbon atoms or aralkylene of 7 to 40 carbon atoms; R¹, R² and R³ being unsubstituted or substituted by one or more of hydroxy, alkoxy of 1 to 20 carbon atoms, oxo, oxirane, alkoxycarbonyl of 2 to 20 carbon atoms, aryloxy-carbonyl of 7 to 20 carbon atoms, acyl of 2 to 20 carbon atoms, acyloxy of 2 to 20 carbon atoms, chloro, bromo, iodo, fluoro, cyano, alkylamido of 2 to 20 carbon atoms, mercapto, alkythio of 1 to 20 carbon atoms, alkylsulfamyl of 1 to 20 carbon atoms, alkylsulfonyl of 1 to 20 carbon atoms, alkyl of 1 to 20 carbon atoms, aryl of 6 to 20 carbon atoms, alkenyl of 2 to 20 carbon atoms and cycloalkyl of 3 to 8 carbon atoms, and where R¹, R² and R³ and their substituents are optionally substituted in the chain by one or more of oxygen, sulfur and nitrogen.

Claim ~~25~~, line 1, delete "Claim 24" and insert therein -- Claim 22 --.

Claim ~~31~~, line 1, delete "Claim 24" and insert therein -- Claim 22 --.

Claim ~~34~~, last line, add -- of 2 to 20 carbon atoms --.

Claim ~~38~~, line 2, delete "metal" and insert therein -- tin --.

Rewrite Claim 41 as follows:

B⁴

41.(amended) A composition comprising

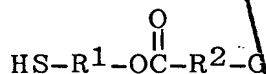
a) a [metal-containing] heat stabilizer for vinyl halide polymers comprising a mono- or diorgano- derivative of tetravalent tin where the remaining valences of the tin atom are satisfied by bonds to halogen, oxygen, phosphorus, sulfur and a residue resulting from

- i) removal of the hydrogen atom from the oxygen atom of a carboxylic acid, an alcohol or a polyol; or

ii) removal of the hydrogen atom from the sulfur atom
of a mercaptan, mercaptoacid, mercaptoalcohol,
mercaptoacid ester or mercaptoalcohol ester,
[in which] and where any oxygen atoms present are bonded
only to one or more of [said metal] tin, carbon, phosphorus
and hydrogen, and

b) [a mercapto ester comprising the reaction product
of an optionally substituted mercaptohydrocarbylene-ol with
a carboxylic acid.]

a mercapto ester of formula



where G is hydrogen, carboxy

or $\overset{\text{O}}{\parallel}\text{C-O-R}^3\text{-SH}$,

R¹ and R³, each independently, is alkylene of 2 to 20
carbon atoms, R² is alkylene of 1 to 20 carbon atoms and
R¹, R² and R³ each independently is alkenylene of 2 to
20 carbon atoms, cycloalkylene of 3 to 8 carbon atoms,
arylene of 6 to 20 carbon atoms, alkarylene of 7 to 40
carbon atoms or aralkylene of 7 to 40 carbon atoms; R¹,
R² and R³ being unsubstituted or substituted by one or
more of hydroxy, alkoxy of 1 to 20 carbon atoms, oxo,
oxirane, alkoxycarbonyl of 2 to 20 carbon atoms, aryloxy-
carbonyl of 7 to 20 carbon atoms, acyl of 2 to 20 carbon
atoms, acyloxy of 2 to 20 carbon atoms, chloro, bromo, iodo,
fluoro, cyano, alkylamido of 2 to 20 carbon atoms, mercapto,
alkythio of 1 to 20 carbon atoms, alkylsulfamyl of 1 to 20
carbon atoms, alkylsulfonyl of 1 to 20 carbon atoms, alkyl
of 1 to 20 carbon atoms, aryl of 6 to 20 carbon atoms,
alkenyl of 2 to 20 carbon atoms and cycloalkyl of 3 to 8

B⁴ cont'd
carbon atoms, and where R¹, R² and R³ and their substituents are optionally substituted in the chain by one or more of oxygen, sulfur and nitrogen.

Claim 44, ~~line 1~~, delete "Claim 43" and insert therein -- Claim 42 --.

Claim ~~50~~, line 1, delete the expression "Claim 43 in which" and insert therein -- Claim 42 in which R² --.

Rewrite Claim 56 as follows:

B⁵
56.(amended) A composition according to Claim [43] 42 in which [the metal is tin] the tin-containing stabilizer comprises a mono- or diorganotin oxide, sulfide, carboxylate, mercaptide, derivative of a mercaptoacid ester or derivative of a mercaptoalcohol or their esters.

Claim ~~58~~, line 1, delete "Claim 58" and insert therein -- Claim 57 --.

IN THE SPECIFICATION

Page -i-, change "ABSTRACT OF THE INVENTION" to -- ABSTRACT OF THE DISCLOSURE --.

STATUS OF THE CLAIMS

In the Office Action of January 20, 1982, the Examiner objected to the heading ABSTRACT OF THE INVENTION, and rejected various of the claims on the ground of prospective double patenting over applicants' parent application Serial No. 070,503, now on appeal.

Claims 1-17, 20-37 and 41-56 were rejected as fully met by Reference E under 35 USC 102b.